

# ***Cyprinus barbatus***

## **Ecological Risk Screening Summary**

Web Version – 10/01/2012



Photo: Chinese Academy of Sciences

## **1 Native Range and Status in the United States**

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### **Native Range**

From Chen and Zhou (2011):

“Endemic to Erhai Lake (250 km<sup>2</sup>), Yunnan province (Mekong drainage), China. Previous records from Yilonghu Lake are miss-identifications.”

### **Status in the United States**

No known occurrences in United States.

### **Means of Introductions to the United States**

No documented introductions inside or outside of the United States.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2011):

“Kingdom Animalia  
Phylum Chordata  
Subphylum Vertebrata  
Superclass Osteichthyes  
Class Actinoptergii  
Subclass Neopterygii  
Infraclass Teleostei  
Superorder Ostariophysi  
Order Cypriniformes  
Superfamily Cyprinoidea  
Family Cyprinidae  
Genus Cyprinus  
Species *Cyprinus barbatus*

Taxonomic current standing: valid

### Size, Weight, Age

From Froese and Pauly (2011):

“Max length: 35.0 cm OT male/unsexed; (Hwang et al. 1988)

### Environment

From Froese and Pauly (2011):

“Benthopelagic; freshwater”

### Climate/Range

Subtropical (Froese and Pauly 2011)

### Distribution

From Chen and Zhou (2011):

“Endemic to Erhai Lake (250 km<sup>2</sup>), Yunnan province (Mekong drainage), China. Previous records from Yilonghu Lake are miss-identifications.”

“The species is restricted to Erhai Lake in China, where it is impacted by threats from agricultural and domestic pollution and introduced species. It has not been recorded since 1982 (W. Zhou pers. comm.) and is assessed as Critically Endangered Possibly Extinct. Prior to the

introduction of alien carps from the 1960s, this and other indigenous species, were dominant. If the species is still present it is likely to be below the thresholds for the C2 criteria.”

“It is thought that the population has declined by more than 90%.”

*C. barbatus* is listed as Critically Endangered by the IUCN Red List of Threatened Species (Chen and Zhou 2011):

## Biology

From Chen and Zhou (2011):

“It is a fish of the upper and middle layers of the lake and dwells mainly in the deep parts. It swims fast and can not tolerate poor water quality, and dies quickly in turbid water. It feeds on mainly plankton and alga. It spawns from April to September, but mainly in May and June. The generation length is c. 2 years.”

## Human uses

Fisheries: commercial (Froese and Pauly 2011)

## Diseases

No known diseases are documented.

## Threat to humans

“Harmless” (Froese and Pauly 2011)

## 3 Impacts of Introductions

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No known introductions have been documented inside or outside of the United States.

## 4 Global Distribution



**Figure 1 (above).** Known distribution of *C. barbatus*. Map from Discover Life (2012).

## 5 Distribution within the United States

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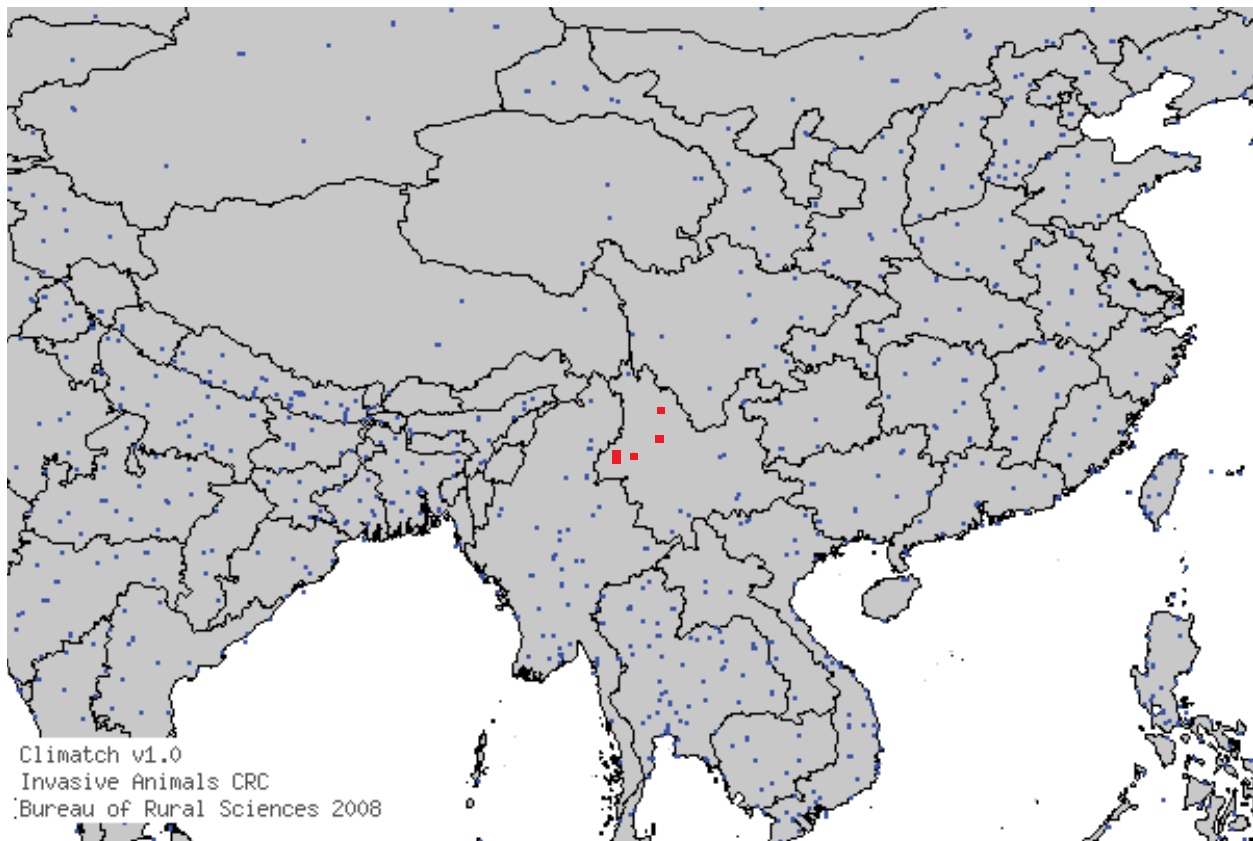
No known distribution within the United States.

## 6 CLIMATCH

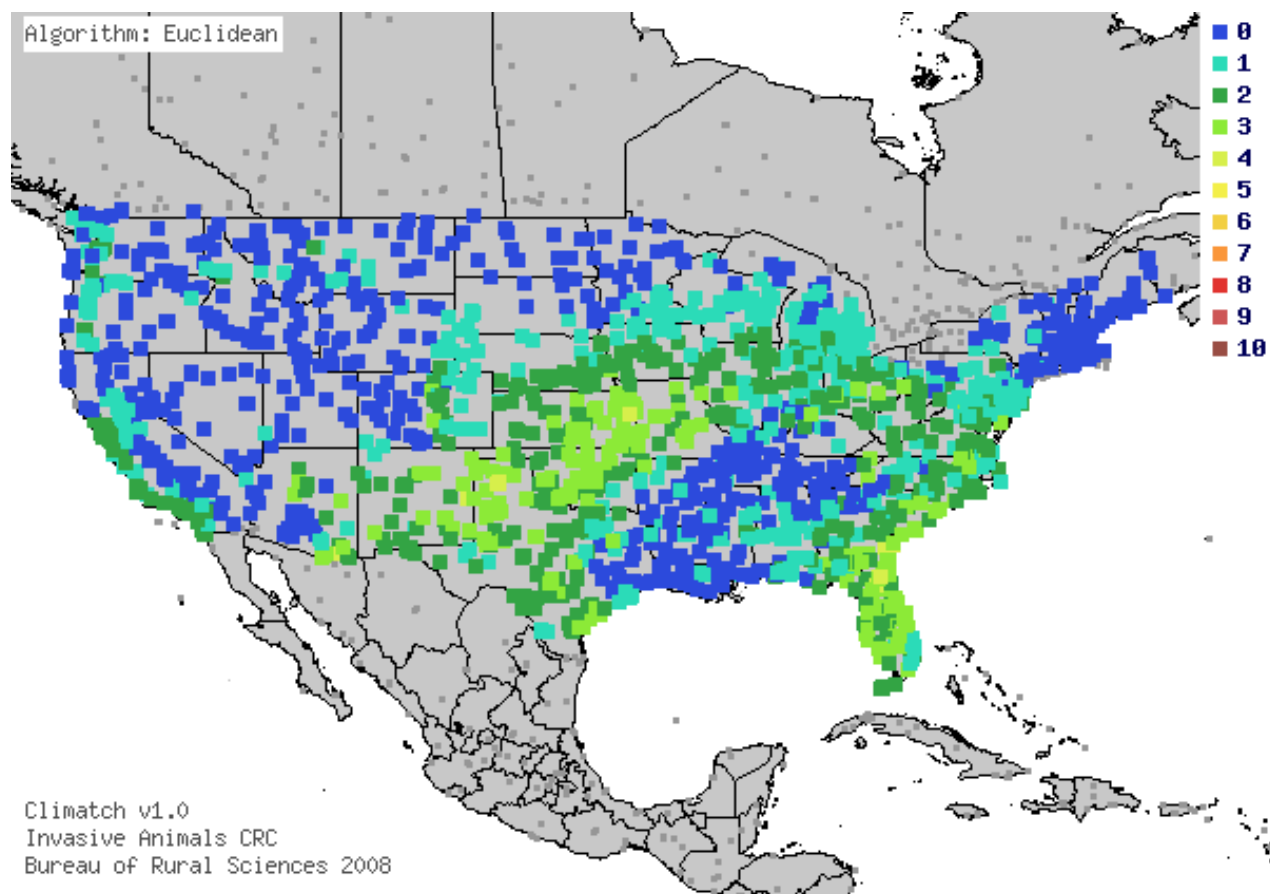
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### Summary of Climate Matching Analysis

The climate match (Australian Bureau of Rural Sciences 2011; 16 climate variables; Euclidean Distance) was low throughout most of the conterminous United States. The highest match occurred in the Midwestern portion of the United States. Climate 6 match indicated that the Continental U.S. has a low climate match. The range for a low climate match is 0.000 – 0.005; the climate match of *C. barbatus* is 0.000.



**Figure 2 (above).** CLIMATCH (Australian Bureau of Rural Sciences 2011) source map showing weather stations selected as source locations (red) and non-source locations (blue) for *C. barbatus* climate matching. Source location based on descriptive information from Froese and Pauly (2011), not geo-referenced data points.



**Figure 3 (above).** Map of CLIMATCH (Australian Bureau of Rural Sciences 2011) climate matches for *Cyprinus barbatus* in the continental United States. Source location based on descriptive information from Froese and Pauly (2011), not geo-referenced data points. 0=Lowest match, 10=Highest match.

**Table 1 (below).** CLIMATCH (Australian Bureau of Rural Sciences 2011) climate match scores

| CLIMATCH Score         | 0          | 1   | 2   | 3   | 4  | 5 | 6 | 7 | 8 | 9 | 10 |
|------------------------|------------|-----|-----|-----|----|---|---|---|---|---|----|
| Count                  | 668        | 486 | 492 | 241 | 14 | 0 | 0 | 0 | 0 | 0 | 0  |
| Climate 6 Proportion = | 0.00 (Low) |     |     |     |    |   |   |   |   |   |    |

## 7 Certainty of Assessment

Peer-reviewed literature on the biology, ecology, and distribution associated with *Cyprinus barbatus* as well as information on its potential invasiveness is extremely limited. More information and research on this species will be needed to strengthen the certainty of this assessment. The risk level is therefore uncertain, and the certainty of this risk is low.

## 8 Risk Assessment

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### Summary of Risk to the Continental United States

The overall risk assessment category for *Cyprinus barbatus* is uncertain. History of invasiveness and climate match data were both extremely low. Little information exists on this species at this time.

### Assessment Elements

- **History of Invasiveness (Sec. 3):** Low
- **Climate Match (Sec. 6):** Low
- **Certainty of Assessment (Sec. 7):** Low
- **Overall Risk Assessment Category:** Uncertain

## 9 References

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

Australian Bureau of Rural Sciences. 2011. CLIMATCH. Available:

<http://adl.brs.gov.au:8080/Climatch> (Accessed August 2011).

Chen, X.Y. and W. Zhou. 2011. *Cyprinus barbatus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1. Available:

<http://www.iucnredlist.org/details/166039/0> (Accessed September 28, 2012).

Discover Life. 2012. *Cyprinus barbatus*. Discover Life: <http://www.discoverlife.org/>. Available: <http://www.discoverlife.org/mp/20q?search=Cyprinus+barbatus> (Accessed September 26, 2012).

Froese, R. and D. Pauly (Eds). 2011. *Cyprinus barbatus*. FishBase. Available:

<http://www.fishbase.org/Summary/speciesSummary.php?ID=14474&genusname=Cyprinus&speciesname=barbatus&AT=cyprinus+barbatus&lang=English> (Accessed August 2011).

ITIS. 2011. *Cyprinus barbatus*. Integrated Taxonomic Information System. Available:

[http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=688948](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=688948) (Accessed August 2011).

## 10 References Quoted But Not Accessed

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**Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.**

Hwang, H.C., I.Y. Chen, and P.C. Yueh. 1988. The freshwater fishes of China in colored illustrations. Shanghai Sciences and Technology Press, Shanghai, China. 2.

Zhou, W. [*Personal communication - Source material did not give full citation for this reference*]